

CLAIMS

- 1 1. A method for finding a selected data service in a computer system having a
2 distributed lookup system and a first host computer, the method comprising:
3 (a) running a first federated bean in the first host computer, the federated
4 bean having a cache memory and a plurality of methods for retrieving
5 information from the cache memory;
6 (b) receiving in the first federated bean, for each data service that has
7 registered with the lookup service, a notification containing a proxy to the
8 data service, the first federated bean thereupon storing the proxy in the
9 cache memory;
10 (c) using the lookup service to locate the first federated bean; and
11 (d) calling a method in the located first federated bean to retrieve from the
12 cache memory a proxy to the selected data service.
- 1 2. The method of claim 1 wherein the computer system comprises a second host
2 computer and the method further comprises:
3 (e) registering a second federated bean in the second host computer with the
4 lookup service; and
5 (f) receiving in the first federated bean a notification from the lookup service,
6 the notification containing information concerning a location of the second
7 federated bean, the first federated bean thereupon storing the information
8 in the cache memory.
- 1 3. The method of claim 2 wherein a second selected data service is available on the
2 second host computer and wherein step (f) comprises receiving in the first
3 federated bean a notification from the lookup service, the notification containing a
4 name of the second host computer and a location of a second lookup service
5 containing a proxy to the second selected data service.

- 1 4. The method of claim 3 further comprising:
 - 2 (g) using the name of the second host computer and the location of a second
 - 3 lookup service to retrieve the proxy to the second selected data service;
 - 4 and
 - 5 (h) using the retrieved proxy to control the second selected data service.
- 1 5. The method of claim 4 wherein step (d) comprises calling a method in the located
- 2 first federated bean to retrieve from the cache memory the information
- 3 concerning the location of the second federated bean.
- 1 6. The method of claim 2 wherein step (f) comprises receiving in the first federated
- 2 bean a notification from the lookup service, the notification containing an object
- 3 containing information for locating the second federated bean, the first federated
- 4 bean thereupon storing the object in the cache memory.
- 1 7. The method of claim 1 wherein the method further comprises:
 - 2 (e) using the retrieved proxy to control the selected data service.
- 1 8. The method of claim 7 wherein the selected data service has an interface with a
- 2 plurality of methods and wherein step (e) comprises using the retrieved proxy to
- 3 call at least one of the plurality of methods in the interface.
- 1 9. Apparatus for finding a selected data service in a computer system having a
- 2 distributed lookup system and a first host computer, the apparatus comprising:
 - 3 a first federated bean in the first host computer, the federated bean having
 - 4 a cache memory and a plurality of methods for retrieving information from the
 - 5 cache memory;

6 a listener that receives in the first federated bean, for each data service
7 that has registered with the lookup service, a notification containing a proxy to
8 the data service, the first federated bean having a mechanism that stores the
9 proxy in the cache memory;

10 a mechanism that uses the lookup service to locate the first federated
11 bean; and

12 a mechanism that calls a method in the located first federated bean to
13 retrieve from the cache memory a proxy to the selected data service.

1 10. The apparatus of claim 9 wherein the computer system comprises a second host
2 computer and the apparatus further comprises:

3 a mechanism that registers a second federated bean in the second host
4 computer with the lookup service; and

5 wherein the notification from the lookup service contains information
6 concerning a location of the second federated bean and wherein the first
7 federated bean thereupon stores the information in the cache memory.

1 11. The apparatus of claim 10 wherein a second selected data service is available on
2 the second host computer and wherein the notification from the lookup service
3 contains a name of the second host computer and a location of a second lookup
4 service containing a proxy to the second selected data service.

1 12. The apparatus of claim 11 further comprising:

2 a method in the first federated bean that uses the name of the second
3 host computer and the location of a second lookup service to retrieve the proxy
4 to the second selected data service; and

5 a mechanism that uses the retrieved proxy to control the second selected
6 data service.

1 13. The apparatus of claim 12 wherein the mechanism that calls a method in the
2 located first federated bean to retrieve from the cache memory a proxy to the
3 selected data service comprises a mechanism that calls a method in the located
4 first federated bean to retrieve from the cache memory the information
5 concerning the location of the second federated bean.

1 14. The apparatus of claim 10 wherein the notification from the lookup service
2 containing information concerning the location of the second federated bean
3 contains an object containing information for locating the second federated bean
4 and the first federated bean having a mechanism that stores the object in the
5 cache memory.

1 15. The apparatus of claim 9 further comprising a mechanism that uses the retrieved
2 proxy to control the selected data service.

1 16. The apparatus of claim 15 wherein the selected data service has an interface
2 with a plurality of methods and wherein the mechanism that uses the retrieved
3 proxy to control the selected data service comprises a mechanism that uses the
4 retrieved proxy to call at least one of the plurality of methods in the interface.

1 17. A computer program product for finding a selected data service in a computer
2 system having a distributed lookup system and a first host computer, the
3 computer program product comprising a computer usable medium having
4 computer readable program code thereon, including:

5 first federated bean program code operable in the first host computer, the
6 federated bean program code establishing a cache memory in the first host
7 computer and having a plurality of methods for retrieving information from the
8 cache memory;

9 program code that receives in the first federated bean, for each data
10 service that has registered with the lookup service, a notification containing a
11 proxy to the data service, the first federated bean thereupon storing the proxy in
12 the cache memory;

13 program code that uses the lookup service to locate the first federated
14 bean; and

15 program code that calls a method in the located first federated bean to
16 retrieve from the cache memory a proxy to the selected data service.

1 18. The computer program product of claim 17 wherein the computer system
2 comprises a second host computer and the computer program product further
3 comprises:

4 program code that registers a second federated bean in the second host
5 computer with the lookup service; and

6 program code that receives in the first federated bean a notification from
7 the lookup service, the notification containing information concerning a location of
8 the second federated bean, the first federated bean thereupon storing the
9 information in the cache memory.

1 19. The computer program product of claim 18 wherein a second selected data
2 service is available on the second host computer and wherein the notification
3 containing information concerning a location of the second federated bean
4 contains a name of the second host computer and a location of a second lookup
5 service containing a proxy to the second selected data service.

1 20. The computer program product of claim 19 further comprising:

2 program code that uses the name of the second host computer and the
3 location of a second lookup service to retrieve the proxy to the second selected
4 data service; and

5 program code that uses the retrieved proxy to control the second selected
6 data service.

1 21. A computer data signal embodied in a carrier wave for finding a selected data
2 service in a computer system having a distributed lookup system and a first host
3 computer, the computer data signal comprising:

4 first federated bean program code operable in the first host computer, the
5 federated bean program code establishing a cache memory in the first host
6 computer and having a plurality of methods for retrieving information from the
7 cache memory;

8 program code that receives in the first federated bean, for each data
9 service that has registered with the lookup service, a notification containing a
10 proxy to the data service, the first federated bean thereupon storing the proxy in
11 the cache memory;

12 program code that uses the lookup service to locate the first federated
13 bean; and

14 program code that calls a method in the located first federated bean to
15 retrieve from the cache memory a proxy to the selected data service.

1 22. Apparatus for finding a selected data service in a computer system having a
2 distributed lookup system and a first host computer, the apparatus comprising:

3 first federated bean means in the first host computer, the federated bean
4 means having a cache memory and means for retrieving information from the
5 cache memory;

6 means for receiving in the first federated bean, for each data service that
7 has registered with the lookup service, a notification containing a proxy to the
8 data service, the first federated bean having means for storing the proxy in the
9 cache memory;

10 means for using the lookup service to locate the first federated bean; and

11 means in the located first federated bean for retrieving from the cache
12 memory a proxy to the selected data service.

1 23. The apparatus of claim 22 wherein the computer system comprises a second
2 host computer and the apparatus further comprises:

3 means for registering a second federated bean in the second host
4 computer with the lookup service; and

5 means for receiving in the first federated bean a notification from the
6 lookup service, the notification containing information concerning a location of the
7 second federated bean, the first federated bean thereupon storing the
8 information in the cache memory.

1 24. The apparatus of claim 23 wherein a second selected data service is available on
2 the second host computer and wherein the notification from the lookup service
3 contains a name of the second host computer and a location of a second lookup
4 service containing a proxy to the second selected data service.

1 25. The apparatus of claim 24 further comprising:

2 means in the first federated bean for using the name of the second host
3 computer and the location of a second lookup service to retrieve the proxy to the
4 second selected data service from the cache memory; and

5 means for using the retrieved proxy to control the second selected data
6 service.

1 26. The apparatus of claim 25 wherein the means for retrieving from the cache
2 memory in the first federated bean a proxy to the selected data service
3 comprises means for calling a method in the located first federated bean to
4 retrieve from the cache memory the information concerning the location of the
5 second federated bean.

1 27. The apparatus of claim 23 wherein the notification from the lookup service
2 containing information concerning the location of the second federated bean
3 contains an object containing information for locating the second federated bean
4 and the first federated bean comprises means for storing the object in the cache
5 memory.

1 28. The apparatus of claim 22 further comprising means for using the retrieved proxy
2 to control the selected data service.

1 29. The apparatus of claim 28 wherein the selected data service has an interface
2 with a plurality of methods and wherein means for using the retrieved proxy to
3 control the selected data service comprises means for using the retrieved proxy
4 to call at least one of the plurality of methods in the interface.